

IN THE CLAIMS:

Please amend the claims as indicated below.

1. (Previously Presented) A method for transmitting one or more training symbols in a multiple  
5 antenna communication system, said method comprising the step of:

transmitting from a transmitter having N antennas at least one training symbol  
using at least one antenna, such that said at least one training symbol can be interpreted by a  
receiver having M antennas, where M is less than N and wherein said at least one training  
symbol comprises a plurality of subcarriers and wherein each of said subcarriers are active on  
10 only one of said N antennas at a given time.

2. (Original) The method of claim 1, wherein said receiver is a SISO receiver.

3. (Original) The method of claim 1, wherein said at least one training symbol is an 802.11 a/g  
15 training symbol.

4. (Original) The method of claim 1, wherein said at least one training symbol comprises at  
least one long training symbol and at least one SIGNAL field.

20 5. (Cancelled)

6. (Original) The method of claim 4, wherein said SIGNAL field indicates a duration that a  
receiver should defer until a subsequent transmission.

25 7. (Previously Presented) The method of claim 1, wherein said at least one training symbol  
comprises said plurality of subcarriers and wherein said transmitting step further comprises the  
step of diagonally loading said subcarriers across said N antennas.

30 8. (Original) The method of claim 6, whereby a lower order receiver can interpret said  
transmitted duration.

9. (Original) The method of claim 6, wherein said duration is represented as a duration of said transmission.
10. (Original) The method of claim 6, wherein said duration is represented as a length of said transmission.
11. (Original) The method of claim 4, wherein said SIGNAL field indicates a number of said antennas in said multiple antenna communication system.
- 10 12. (Original) The method of claim 11, wherein said number of said antennas allows said multiple antenna communication system to be scalable.
13. (Original) The method of claim 11, wherein said number of said antennas allows a receiver to correlate channel coefficients with corresponding transmit antennas.
- 15 14. (Previously Presented) A transmitter in a multiple antenna communication system, comprising:

N transmit antennas for transmitting at least one training symbol using at least one antenna, such that said at least one training symbol can be interpreted by a receiver having M antennas, where M is less than N and wherein said at least one training symbol comprises a plurality of subcarriers and wherein each of said subcarriers are active on only one of said N antennas at a given time.
15. (Original) The transmitter of claim 14, wherein said receiver is a SISO receiver.
- 25 16. (Original) The transmitter of claim 14, wherein said at least one training symbol is an 802.11 a/g training symbol.
17. (Original) The transmitter of claim 14, wherein said at least one training symbol comprises at least one long training symbol and at least one SIGNAL field.

18. (Cancelled)

19. (Original) The transmitter of claim 17, wherein said SIGNAL field indicates a duration that a receiver should defer until a subsequent transmission.

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20. (Original) The transmitter of claim 14, wherein said subcarriers are diagonally loaded across said N transmit antennas.

10 21. (Original) The transmitter of claim 17, wherein said SIGNAL field indicates a number of said antennas in said multiple antenna communication system.

22. (Previously Presented) A method for receiving data on at least one receive antenna transmitted by a transmitter having a plurality of transmit antennas in a multiple antenna communication system, said method comprising the step of:

15 receiving an indication of a duration to defer until a subsequent transmission, said indication transmitted such that said indication can be interpreted by a lower order receiver by diagonally loading a SIGNAL field across said plurality of transmit antennas; and  
deferring for said indicated duration.

20 23. (Original) The method of claim 22, wherein said method is performed by a SISO receiver.

24. (Previously Presented) The method of claim 22, wherein said indication is transmitted in said SIGNAL field that complies with the 802.11 a/g standards.

25 25. (Cancelled)

26. (Previously Presented) A receiver in a multiple antenna communication system having at least one transmitter having a plurality of transmit antennas, comprising:

30 at least one receive antenna for receiving an indication of a duration to defer until a subsequent transmission, said indication transmitted such that said indication can be interpreted by a lower order receiver by diagonally loading a SIGNAL field across said plurality of

antennas; and

means for deferring for said indicated duration.

27. (Original) The receiver of claim 26, wherein said method is performed by a SISO receiver.

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28. (Previously Presented) The receiver of claim 26, wherein said indication is transmitted in said SIGNAL field that complies with the 802.11 a/g standards.

29. (Cancelled)

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30. (Currently Amended) A method for communicating in a multiple antenna communication system, said method comprising the step of:

transmitting one or more symbols from a transmitter having N transmit branches;

obtaining feedback at said transmitter from at least one receiver indicating a

15 performance for at least one of said N transmit branches; and

adapting one or more parameters of said at least one of said N transmit branches  
based on said feedback, wherein said one or more parameters includes a modulation scheme and  
encoding rate.

20 31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

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34. (Currently Amended) A transmitter in a multiple antenna communication system, comprising:

N transmit branches for transmitting one or more symbols;

a feedback path for obtaining feedback at said transmitter from at least one

30 receiver indicating a performance for at least one of said N transmit branches; and

means for adapting one or more parameters of said at least one of said N transmit

branches based on said feedback, wherein said one or more parameters includes a modulation scheme and encoding rate.

35. (Cancelled)

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36. (Cancelled)

37. (Cancelled)

10 38. (Currently Amended) A method for transmitting data in a multiple antenna communication system having N transmit antennas, said method comprising the step of:

transmitting a legacy preamble having at least one long training symbol and at least one additional long training symbol on each of said N transmit antennas of a transmitter, such that said training symbols can be interpreted by a receiver having M antennas, where M is less than N and wherein said at least one training symbol comprises a plurality of subcarriers and wherein each of said subcarriers are active on only one of said N antennas at a given time.

15 39. (Original) The method of claim 38, wherein said legacy preamble further comprises at least one short training symbol.

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40. (Original) The method of claim 38, wherein said legacy preamble further comprises at least one SIGNAL field.

41. (Original) The method of claim 38, wherein said legacy preamble is an 802.11 a/g preamble.

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